Application No. 10/742,121
Reply to Office Action of May 2, 2006

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of printing, comprising charging a printhead of an inkjet printer with ink, the ink being a fluid homogeneous mixture comprising polymerized fatty acid-based polyamide resin that is the reaction product of reactants comprising polymerized fatty acid polyamide, ethylene diamine, hexamethylenediamine, and fatty acid with an organic solvent and colorant, wherein the organic solvent comprises a first solvent and a second solvent, where the first solvent comprises at least one solvent selected from solvents comprising a single amide, a single carbamide, or a single hydroxyl group as the only non-hydrocarbon moiety in the solvent; and the second solvent has a viscosity at 25°C that is less than 60 cps and comprises at least one hydrocarbon solvent; and transferring the ink from the printhead onto a substrate.

2. (Original) The method of claim 1 wherein the printer is a drop-on-demand printer.

3. (Original) The method of claim 1 wherein the first solvent is at least 20% by weight, and the second solvent is up to 80% by weight of the organic solvent in the ink.

4. (Original) The method of claim 1 wherein the first solvent comprises at least one of N-methylpyrrolidinone, N,N-dimethylformamide, N,N-dimethylacetamide, and tetramethylurea; and the second solvent comprises at least one terpene hydrocarbon.

5. (Previously Presented) The method of claim 1 wherein the first solvent comprises at least one alcohol solvent selected from the group consisting of cyclohexanol, 1-hexanol, 2-hexanol, 3-hexanol, cis-2-hexen-1-ol, trans-2-hexen-1-ol, cycloheptanol, 1-heptanol, 2-heptanol, 2-ethyl-1-hexanol, 1-octanol, 1-nonanol, 3,5,5-trimethyl-1-hexanol, 1-decanol, α-

terpineol, and 3,7-dimethyl-3-octanol; and the second solvent comprises mineral spirits or a fraction thereof.

6. (Original) The method of claim 1 wherein the organic solvent further comprises a third solvent selected from α-hydroxy-carboxylic ester, polyalkylene glycol alkyl ether, and ketone-containing solvents.

7. (Original) The method of claim 6 wherein the third solvent is selected from methyl lactate, ethyl lactate, n-propyl lactate, isopropyl lactate, diethylene glycol methyl ether, dipropylene glycol methyl ether, and cyclohexanone.

8. (Original) The method of claim 6 wherein the third solvent is up to 50% by weight of the organic solvent in the ink.

9. (Currently Amended) A printing ink composition comprising colorant, resin and solvent, where the resin is a polymerized fatty acid-based polyamide resin that is the reaction product of reactants comprising polymerized fatty acid polyamide, ethylene diamine, hexamethylenediamine, and fatty acid, the solvent comprises a first solvent and a second solvent wherein the first solvent comprises at least one solvent having a single amide group or a single carbamide group as the only non-hydrocarbon moiety in the solvent; and the second solvent has a viscosity at 25°C that is less than 60 cps and comprises at least one hydrocarbon solvent.

10. (Original) The printing ink of claim 9 wherein the first solvent is at least 20% by weight, and the second solvent is up to 80% by weight of the organic solvent in the ink.

11. (Original) The printing ink of claim 9 wherein the components of the first solvent each have a total of 5 to 11 atoms selected from carbon, nitrogen, and oxygen.

12. (Original) The printing ink of claim 11 wherein the first solvent comprises at least one of N-methylpyrrolidinone, N,N-dimethylformamide, N,N-dimethylacetamide, and tetramethylurea.

13. (Currently Amended) The printing ink of claim 9 wherein the second solvent has a viscosity of less than ~~60~~ 45 cps at 25°C.

14. (Original) The printing ink of claim 9 wherein the second solvent comprises at least one terpene hydrocarbon.

15. (Original) The printing ink of claim 14 wherein the second solvent comprises at least one terpene selected from the group consisting of α-pinene, β-pinene, limonene, and terpinolene.

16. (Original) The printing ink of claim 12 or 14 wherein the first solvent comprises at least one of N-methylpyrrolidinone, N,N-dimethylformamide, N,N-dimethylacetamide, and tetramethylurea; and the second solvent comprises at least one terpene hydrocarbon.

17. (Original) The printing ink of claim 12 or 14 wherein the first solvent comprises N-methylpyrrolidinone and the second solvent comprises terpinolene.

18. (Original) The printing ink of claim 9 wherein the organic solvent further comprises a third solvent selected from α-hydroxy-carboxylic ester, polyalkylene glycol alkyl ether, and ketone.

19. (Original) The printing ink of claim 18 wherein the third solvent is selected from methyl lactate, ethyl lactate, n-propyl lactate, isopropyl lactate, diethylene glycol methyl ether, dipropylene glycol methyl ether, and cyclohexanone.

20. (Original) The printing ink of claim 18 wherein the third solvent is up to 50% by weight of the organic solvent in the ink.

21. (Cancelled)

22. (Original) The printing ink of claim 9 wherein the resin comprises 5-40 wt % of the total weight of resin and solvent.

23. (Original) The printing ink of claim 9 wherein the solvent comprises at least 30 wt % of the total weight of resin and solvent.

24. (Original) The printing ink of claim 9 having a viscosity of less than 25 cps at one or more temperatures between 25°C and 60°C.

25. (Original) The printing ink of claim 9 having a flash point of greater than 40°C.

26. (Currently Amended) A printing ink composition comprising colorant, resin and solvent, where the resin is a polymerized fatty acid-based polyamide resin that is the reaction product of reactants comprising polymerized fatty acid polyamide, ethylene diamine, hexamethylenediamine, and fatty acid, the solvent comprises a first solvent and a second solvent, where the first solvent comprises at least one solvent having a single hydroxyl group

as the only non-hydrocarbon moiety in the solvent; and the second solvent has a viscosity at 25°C that is less than 60 cps and comprises at least one hydrocarbon.

27. (Original) The printing ink of claim 26 wherein the first solvent is at least 20% by weight, and the second solvent is up to 80% by weight of the organic solvent in the ink.

28. (Original) The printing ink of claim 26 wherein the components of the first solvent each have a total of 5 to 11 atoms selected from carbon and oxygen.

29. (Previously Presented) The printing ink of claim 28 wherein the first solvent comprises a hydroxyl-containing solvent selected from the group consisting of cyclohexanol, 1-hexanol, 2-hexanol, 3-hexanol, cis-2-hexen-1-ol, trans-2-hexen-1-ol, cycloheptanol, 1-heptanol, 2-heptanol, 2-ethyl-1-hexanol, 1-octanol, 1-nonanol, 3,5,5-trimethyl-1-hexanol, 1-decanol, α-terpineol, and 3,7-dimethyl-3-octanol.

30. (Currently Amended) The printing ink of claim 26 wherein the second solvent has a viscosity of less than ~~60~~ 45 cps at 25°C.

31. (Original) The printing ink of claim 26 wherein the second solvent comprises mineral spirits or a fraction thereof.

32. (Original) The printing ink of claim 29 or 31 wherein the first solvent comprises 1-hexanol or 1-heptanol and the second solvent comprises mineral spirits.

33. (Original) The printing ink of claim 26 wherein the organic solvent further comprises a third solvent selected from α-hydroxy-carboxylic ester, polyalkylene glycol alkyl ether, and ketone.

34. (Original) The printing ink of claim 33 wherein the third solvent is selected from methyl lactate, ethyl lactate, n-propyl lactate, isopropyl lactate, diethylene glycol methyl ether, dipropylene glycol methyl ether, and cyclohexanone.

35. (Original) The printing ink of claim 33 wherein the third solvent is up to 50% by weight of the organic solvent in the ink.

36. (Cancelled).

37. (Original) The printing ink of claim 26 wherein the resin comprises 5-40 wt % of the total weight of resin and solvent in the ink.

38. (Original) The printing ink of claim 26 wherein the solvent comprises at least 30 wt % of the total weight of resin and solvent.

39. (Original) The printing ink of claim 26 having a viscosity of less than 25 cps at one or more temperatures between 25°C and 60°C.

40. (Original) The printing ink of claim 26 having a flash point of greater than 40°C.

41. (Previously Presented) The printing ink according to Claim 26, wherein the polymerized fatty acid-based polyamide resin has a softening point of at least 70°C.

42. (Previously Presented) The printing ink according to Claim 26, wherein the polymerized fatty acid-based polyamide resin has a weight average molecular weight of from 2,000 to 10,000.

43. (New) The method according to Claim 1, wherein the second solvent has a viscosity at 25°C that is less than 45 cps.

44. (New) The method according to Claim 1, wherein the second solvent has a viscosity at 25°C that is less than 30 cps.

45. (New) The method according to Claim 1, wherein the second solvent has a viscosity at 25°C that is less than 25 cps.

46. (New) The printing ink according to Claim 9, wherein the second solvent has a viscosity at 25°C that is less than 30 cps.

47. (New) The printing ink according to Claim 9, wherein the second solvent has a viscosity at 25°C that is less than 25 cps.

48. (New) The printing ink according to Claim 9, wherein the second solvent has a viscosity at 25°C that is less than 30 cps.

49. (New) The printing ink according to Claim 9, wherein the second solvent has a viscosity at 25°C that is less than 25 cps.

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